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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/772,064

02/03/2004

Romel N. Manatad

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08/18/2006

EXAMINER

BREWSTER, WILLIAM M

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ART UNIT

PAPER NUMBER

2823

DATE MAILED: 08/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/772,064

Applicant(s)

MANATAD, ROMEL N.

Examiner

William M. Brewster

Art Unit

2823

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 21-23 and 25-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1, 4-9, 23 and 25-31 is/are allowed.
- 6) ☒ Claim(s) 2, 3, 21, 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 3, 21, 22, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hembree et al., US Patent No. 6,392,429 B1, in view of Kasem et al., US Patent No. 6,392,290 B1.

Hembree teaches:

limitations from claims 2, 3, a method for making a semiconductor package comprising:

- (a) in fig. 1, in col. 1, lines 12-50, molding a molding material 14 around a leadframe structure, with 40, col. 6, lines 54-68, having a die 12 attach region 34 and a plurality of leads 40, wherein the die attach region is exposed through a window in the molding material 14; and
- (b) after (a), mounting a semiconductor die to the die attach region using a flip chip mounting process, col. 7, lines 55-68;

limitations from claim 21, in fig. 1, the method of claim 2 wherein the die attached region comprises at least one aperture, 34, col. 4, lines 41-48;

limitations from claim 22, in fig. 1, the method of claim 3 wherein the die attached region comprises at least one aperture, 34, col. 4, lines 41-48.

Hembree does not specify a vertical power MOSFET with source and gate leads, but Kasem does.

Kasem teaches limitations from claim 2, in fig. 1, wherein the semiconductor die comprises a vertical power MOSFET, col. 4, lines 10-35, for a flip-chip configuration, col. 10, lines 40-44;

limitations from claim 2, figs. 3A - 3B, wherein the semiconductor die 11 comprises a vertical power MOSFET, col. 4, line 10 - col. 5, line 9;

limitations from claim 3, figs. 3A - 3B, wherein the plurality of leads include at least one source lead 16 and at least one gate lead 20, col. 4, line 10 - col. 5, line 9.

Kasem gives motivation in col. 1, lines 36 - 57. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to recognize that combining Kasem's process with Tsuda's invention would have been beneficial because it is a less expensive and simpler way to form a vertical power MOSFET.

Allowable Subject Matter

Claims 1, 4-9, 23, 25-31 are allowed.

The following is an examiner's statement of reasons for allowance: the features in claim 1, lines 7-12:

“(b) after (a), mounting a semiconductor die having a surface with an electrical terminal to the die attach region and within the window using a flip chip mounting processing wherein after mounting the leads have surfaces that are substantially coplanar with the exterior surface of the molding material and the surface of the die with the electrical terminal and wherein the surface of the die with the electrical terminal is exposed by the window in the molding material,”

cannot be found in the prior art of record. Examiner has found the arguments in pp. 6-10, of the remarks received 20 July 2006 convincing.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

Response to Arguments

Applicant's arguments with respect to claims 2, 3, 21, 22 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William M. Brewster whose telephone number is 571-272-1854. The examiner can normally be reached on Full Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on 571-272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

14 August 2006
WB

William M. Brewster
WILLIAM M. BREWSTER
PRIMARY EXAMINER